

Cold-Weather Casualties and Injuries Chart

In Cold Weather:

- Train soldiers on the proper use of cold weather clothing
- Remember the acronym **C-O-L-D** when wearing clothing in cold weather (**C**: Keep it **C**lean; **O**: avoid **O**verheating; **L**: wear clothing **L**oose and in layers; **D**: keep clothing **D**ry)
- Maintain adequate hydration and ensure nutritional requirements are met

Chilblain

Cause

- **Repeated exposure of exposed skin for prolonged periods from 20°- 60°F with high humidity (for those not acclimated to cold weather)**

Symptoms

- Swollen, red skin (or darkening of the skin in dark-skinned soldiers)
- Tender, hot skin, usually accompanied by itching

First-Aid

- Warm affected area with direct body heat
- Do not massage or rub affected areas
- Do not wet the area or rub it with snow or ice
- Do not expose affected area to open fire, stove, or any other intense heat source

Prevention

- Use contact gloves to handle all equipment; never use bare hands
- Use approved gloves to handle all fuel and POL* products
- In extreme cold environments, do not remove clothing immediately after heavy exertion (PT); wait until you are in a warmer location
- Never wear cotton clothing in cold-weather environments

Hypothermia

Cause

- **Prolonged cold exposure and body-heat loss. May occur at temperatures above freezing, especially when a person's skin or clothing is wet**

Symptoms

- Shivering may or may not be present
- Drowsiness, mental slowness, lack of coordination that could progress to unconsciousness, irregular heartbeat, and death

First-Aid

- Get the soldier to a medical facility as soon as possible, because hypothermia is the most serious cold exposure medical emergency and can lead to death
- Never assume someone is dead until determined by a medical authority, even if a victim is cold and not breathing
- Remove wet clothing and wrap victim in blankets or a sleeping bag
- Place another person in sleeping bag as an additional heat source
- Minimize handling of the unconscious victim with a very low heartbeat so as to not induce a heart attack

Prevention

- Never wear cotton clothing in cold-weather environments
- Anticipate the need for warming areas for soldiers exposed to cold, wet conditions

Frostbite

Cause

- **Freezing of exposed skin, such as fingers, toes, ears, and other facial parts**
- **Exposure of skin to metal, extremely cool fuel and POL*, wind chill, and tight clothing, particularly boots**

Symptoms

- Numbness in affected area
- Tingling, blistered, swollen, or tender areas
- Pale, yellowish, waxy-looking skin (grayish in dark-skinned soldiers)
- Frozen tissue that feels wooden to the touch

First-Aid

- Evacuate immediately, because frostbite can lead to amputation
- Start first-aid immediately. Warm affected area with direct body heat
- Do not thaw frozen areas if treatment will be delayed
- Do not massage or rub affected areas
- Do not wet the area or rub it with snow or ice
- Do not expose affected area to open fire, stove, or any other intense heat source

Prevention

- Use contact gloves to handle all equipment; never use bare hands
- Use approved gloves to handle all fuel and POL* products
- Never wear cotton clothing in cold-weather environments
- Keep face and ears covered and dry
- Keep socks clean and dry
- Avoid tight socks and boots



Immersion foot (trench foot)

Cause

- **Prolonged exposure of feet to wet conditions at 32°- 60°F. Inactivity and damp socks and boots (or tightly laced boots that impair circulation) speed onset and severity**

Symptoms

- Cold, numb feet may progress to hot w/shooting pains
- Swelling, redness, and bleeding

First-Aid

- Get medical help immediately
- Rewarm feet by exposing them to warm air
- Do not allow victim to walk on injury
- Evacuate victim to a medical facility
- Do not massage, rub, moisten, or expose affected area to extreme heat

Prevention

- Keep feet clean and dry; change wet or damp socks as soon as possible
- Wipe the inside of Vapor Barrier boots dry at least once per day, or more often as feet sweat
- Dry leather boots by stuffing with paper towels



Additional Medical Considerations in the Cold Weather environment

Dehydration

Cause

- **Depletion of body fluids**

Symptoms

- Dizziness
- Weakness
- Blurred vision

First-Aid

- Replace lost water. Water should be sipped, not gulped
- Get medical treatment

Prevention

- Consume 3-6 quarts of water per day at a minimum

Snow Blindness

Cause

- **Burning of the cornea of the eye by exposure to intense UV rays of the sun in a snow-covered environment**

Symptoms

- Pain, red, watery or gritty feeling in the eyes

First-Aid

- Rest in total darkness; bandage eyes with gauze
- Evacuate if no improvement within 24 hours

Prevention

- Use sunglasses with side protection in a snow-covered environment
- Use improvised slit glasses if sunglasses are not available

Carbon Monoxide Poisoning

Cause

- **Replacement of oxygen with carbon monoxide in the blood stream from burning fuels without proper ventilation**

Symptoms

- Headache, confusion, dizziness, excessive yawning
- Cherry red lips and mouth (in light-skinned individuals); grayish tint to lips and mouth (in dark-skinned individuals)
- Unconsciousness

First-Aid

- Move to fresh air
- CPR if needed
- Administer oxygen if available
- Evacuate

Prevention

- Use only Army-approved heaters in sleeping areas and ensure that personnel are properly licensed to operate the heaters
- Never sleep in running vehicles
- Always post a fire guard when operating a heater in sleeping areas

* POL - petroleum, oil, lubricants

